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Nº. XXIX.

On the Mode most easily and effectually practicable of drying up the Marshes of the maritime Parts of North America. By THOMAS WRIGHT, Licentiate of the College of Surgeons in Ireland, and Teacher of Anatomy.

Read Nov. 21, 1794. HAVING for some years during the American war (here so called) traversed that continent in the exercise of my profession, I usually noted such local circumstances as it occurred to me might be improved upon, or in some manner applied to useful purposes. The health of the soldiery being my particular object, I necessarily contemplated the causes of sickness, some of which were so universal, that few, either natives or others escaped their baleful influence; but chiefly the effluvia of swampy lands in producing ague almost as an epidemic.

It is useless to know causes, it is idle to descant on them, unless with the intention by their removal to obviate their effects: there are but two modes of drying up the great marshes of America; the most effectual would be by draining them, but that is not an easy task, as the dead level of the coast country between the Appalachian Mountains and the Atlantic seems to defy the most determined industry; this I relinquish as impracticable except by many years labour. I shall therefore propose what I hope will prove a more prompt remedy, and possibly not less effectual.

Following the most obvious appearances of things, it is evinced in the most legible characters of nature, the shoaling coast, sandy beach, swampy plains, large rivers, sandy hills raised over heaps of the exuviae of marine animals, that the eastern coast of North America has been

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of very late Neptunian origin ; and this crude state of the land not yet fully relinquished by its antient oceanic possessor is the probable cause of ague being endemic. The important question arising on this statement is, how may the superfluous waters be removed ?—I answer by evaporation. On this subject let facts speak ; they only can throw light on such a subject, and lay a solid foundation for theory ; if this agent be found effectual in proportion to the intensity of the climate, and if it has produced the desired effect in a much cooler climate than that of America, *a fortiori*, it will prove more efficacious and more quickly so in that country.

The temperature of Ireland though equable seldom affords three months summer weather, i. e. above 60° Fahrenheit's ; yet after the most rainy winters (and frequently here fall 30 inches of rain in the year) the temporary pools called *Turloughs* which collect in all our confined valleys, evaporate wholly, even before summer comes on, though the atmosphere is generally loaded with moisture, nay almost saturated with it from the ocean and other seas around us : and though here are wanting the two great requisites for evaporation viz. *Air chemically dry*, and *heat* comparatively speaking, the cause of this happy effect is very partial, it is the continental wind which always visits us periodically and with the sun after winter ; it is absolutely dry though not hot ; it in one months blowing, and ever without storms, rids the whole island of its superfluous water, and even leaves the fields parched, the roads almost impassable for the dust, and the lips of the inhabitants chapped and cleft by the quick evaporation. This is the season which restores tone to our bodies relaxed and debilitated by a warm wet winter ; for we have no epidemic inflammatory diseases until the continental wind comes from the East.

Here then if a few weeks well exsiccate the whole island ; what prevents more months in America from producing the same effect, where there is a dry and a hot wind, certainly the latter ?

In Ireland the ague is never epidemic, nor endemic, as far as I know, except the season should sometimes be such as to induce it, and of this I remember but one instance. Yet the ague and the dysentery have been both epidemic in Ireland, as the ancient British settlers severely experienced ; and when they were so, Ireland resembled America, it was a wood.

I shall relate one truly remarkable instance of the effects of clearing the country of wood in promoting evaporation. Before the time of Cromwell, not yet two centuries, there was a furnace for smelting iron ore and a foundery at the town of Montrath in the Queens County ; the iron was sent down a *then navigable river*, the *Nore*, to the next seaport for exportation : at this day that river has not water sufficient to float a canoe, and is a mere rivulet for many miles below that town ; nor is there at this instant any person of the neighbourhood who remembers it otherwise. What has this arisen from ? As much rain falls as ever, the climate is still as cool ; yet the winds in March remove all the autumnal and hyemal collections of water, and thus rivers formerly navigable are dwindled into brooks. Assuredly the same easterly winds prevailed before the seventeenth century, but the country was then covered with wood ; it is now clear and the harsh breeze sweeps the bare bottom of the earth, and bears away the combining moisture. Admitting this then to be the fact, it may be replied to by observing, that it is evidently inadmissible in America, a new country where the crude earth has not yet yielded so many crops of vegetables as to rot and form peat or combustible turf for fuel, therefore timber

is an indispensable necessary of life.—This I grant; yet I think that the felling of the woods may be so regulated as to render economy and utility perfectly compatable, viz. in the following manner.

Let it be supposed that the N. W. and S. E. are the aësciae or prevailing winds of North America; let the surveyor general mark out a tract of say 100 or 200 miles in a right line to be cleared of trees; then every blast from these two opposite points will ventilate 200 miles of country, bearing along the fumes of all the marshes, while the great *vista* or avenue skirted with wood at both sides would furnish the most salubrious and consequently valuable situation for settlers.

Nº. XXX.

A Memoir on the Discovery of certain Bones of a Quadruped of the Clawed Kind in the Western Parts of Virginia.
By THOMAS JEFFERSON, Esq.

Read March 10, 1797. IN a letter of July 3d, I informed our late most worthy president that some bones of a very large animal of the clawed kind had been recently discovered within this state, and promised a communication on the subject as soon as we could recover what were still recoverable of them. It is well known that the substratum of the country beyond the Blue Ridge is a limestone, abounding with large caverns, the earthy floors of which are highly impregnated with nitre; and that the inhabitants are in the habit of extracting the nitre from them. In digging the floor of one of these caves, belonging to Frederic Cromer in the county of Greenbriar, the labourers at the depth of two or three feet, came to some bones, the size and form of which bespoke